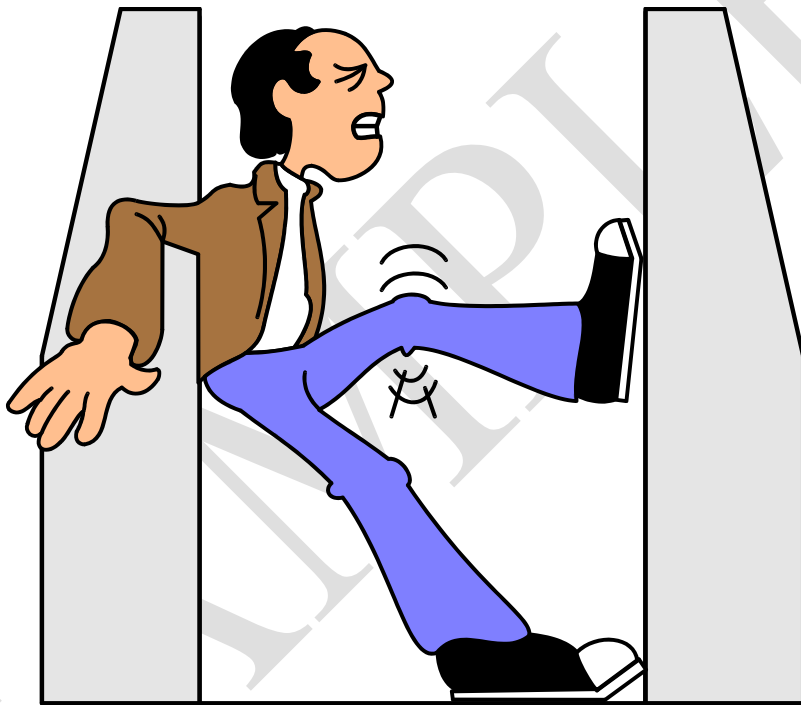


TOPIC FOUR: GENERAL SAFETY



WORKING WITH DANGEROUS SUBSTANCES

Many people associate the handling of chemicals with heavy industry. Common cleaning and laundry products we use every day are, in fact, dangerous chemicals that can cause skin irritations, burns, severe internal damage and even death.

Almost all workplaces have at least one dangerous HAZCHEM on site. Every service industry worker will handle at least one chemical or dangerous substance once a week. This includes aerosols, insect sprays, cleaning products, printer inks and photocopier toner. Add to this the chemicals that are brought into the business by cleaners and contractors and you have a high risk scenario

If the same regulations that apply to industrial worksites applied to EVERY place where chemicals are used and stored we would HAVE to:

- Store all household cleaning products in a locked facility
- Display HAZCHEM (hazardous chemical) warning notices on storage facilities
- Keep a register of all hazardous chemicals used and stored
- Ensure that the chemicals can only be used by people who have been trained in their safe handling and proper use
- Be trained in the proper way to deal with chemical spills



Compare this with what happens in many houses and general small businesses:

Most chemicals are stored in unlocked cupboards or sheds and often in reach of children. Many of these are toxic, inflammable or explosive when exposed to heat.

Most people do not measure and mix solutions according to the label instructions, increasing the danger of injury from fumes or skin splashes because of increased toxicity.

Our (generally unlocked) garden sheds contain enough biological and chemical bug warfare agents to kill a small city.

Paints and solvents which are common in and around homes and businesses will explode if exposed to a spark, and this is the cause of many fires.

Accidents waiting to happen

When most people think of bug sprays, they think about the dangers of breathing the fumes. A Perth restaurant was destroyed recently when stored cans of Roach Bombs blew up in the kitchen. Aerosols are deadly in the wrong storage space.

Never to assume that your workplace is safe or that products are used correctly. In order to understand chemical safety, you must get into some very good habits:

- Read the labels and measure and use the chemical according to the manufacturer's instructions
- For industrial strength chemicals, obtain the Materials Safety Data Sheets and make sure that you follow their instructions for use and storage
- Store chemicals only in their original containers or in generic containers which are clearly marked with both the name of the substance and any HAZCHEM warnings
- Never store chemicals in soft drink bottles or food containers
- Keep chemicals out of reach of children, or at least in a locked storage area
- Keep petrochemicals and inflammable chemicals in a special, locked, storage area with the appropriate HAZCHEM warnings
- Chlorines (such as bleach and pool chemicals) give off a toxic gas, they must be used and stored according to the labels



Chemical warning signs (also known as HAZCHEM signs) are generally yellow with black writing.

The contaminated area sign on the left has its header in Red to alert to danger.

Workplaces which handle a lot of chemicals have to display official HAZCHEM warning signs stating the danger and the type of chemical involved.

This can include general businesses who handle products for sale or resale.

If you think it does not apply to you, think again!

Here are a few of the real-life nasty things that occurred in service businesses.

A seller of outdoor furniture and barbeques did not notice an LPG gas leak. A customer reported it. If a spark had ignited it, everything within a 1 km radius could have been flattened.

A caretaker put a laser printer cartridge in an incinerator, leading to an explosion which severely burned his head and face.

A curious child who was visiting a parent at work upended a bottle of solvent, releasing toxic fumes in a poorly ventilated area.

The office worker breathed in the contents of an aerosol duster used to clean keyboards, not aware that the propellant could kill her if inhaled into the lungs.

The office receptionist was asked to top up the chlorine in the health club spa. She did not read the label and put in ten times the safe limit. Patrons and staff had to be evacuated because of toxic fumes.

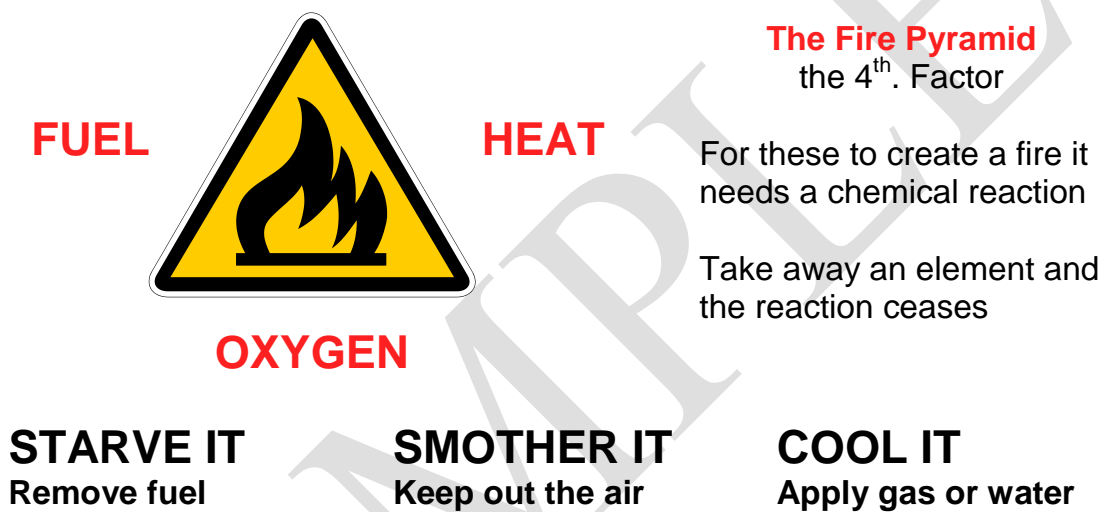
THE EMERGENCY COLOUR CODES

Type of emergency	Colour Code	Code covers
Medical	Blue	<p>Accidents and incidents requiring first aid, paramedic and medical treatment</p> <p>What you should do: Report immediately, give first aid (if qualified to do so) and reassure the patient.</p>
Fire and Smoke	Red	<p>Fires, bushfires and smoke hazards</p> <p>What you should do: Report immediately, help evacuate the area; follow the instructions of the fire warden, go immediately to the safe zone.</p>
Bomb Threat	Purple	<p>All bomb threats whether real or hoax;</p> <p>Report immediately. Look out for suspicious packages and behaviour. Keep calm and evacuate the area. Follow the instructions of the fire warden or emergency services, go immediately to the safe zone.</p>
Internal threat	Yellow	<p>Threat to services and communications such as: gas, electricity supplies, failure of telephone and communications systems, hazardous substances and biohazard spills, illegal occupancy</p> <p>What you should do: Report immediately. Small chemical biohazard and chemical spills can be handled only if you have been trained to do so. If failure of utilities might indicate presence of bushfire, alert supervisor to possibility of upgrade to Code Red.</p>
External emergencies	Brown	<p>Civil disturbances, wars, floods and storms.</p> <p>What you should do: In the case of civil or military violence, stay calm and go to a safe zone if one is possible (shelters or basements). Stay away from windows and areas where you can be hurt by flying debris. In floods, storms and cyclones, follow the instructions given out in safety manuals supplied by emergency services. Disconnect power and phone lines to computers. Stay alert to signs of fire caused by lightning strikes or electricity shorts. Alert supervisor of possibility of upgrade to Code Red.</p>
Evacuation	Orange	<p>All evacuation procedures.</p> <p>What you should do: follow the emergency action codes and instructions of wardens and emergency personnel. If you are responsible for looking after residents or clients in a facility, make sure that safe arrangements are made to help them out of harms way.</p>
Personal Threat	Black	<p>Robberies with and without violence, threats of harm and self-harm</p>

FIRE SAFETY

Fire is the result of four factors which combine to form a conflagration:

- Fuel:** solid; liquid or gas
- Oxygen:** an environmental factor or one which can be produced by a chemical reaction
- Heat:** ignition can be as violent as an explosion, as small as a spark, or as slow acting as a low grade heat source (like a stove left on or a computer overheating)
- Chemical reaction** petrol can be left in the sun, but will not explode unless there is a spark or flame, read the warning labels on goods to find out what is inert (safe) and what is a dangerous combination.



Remove any one of these factors and you can control a fire by:

- Starvation: remove fuel or combustible material from vicinity of fire
- Smothering: reduce the availability of oxygen by shutting in the fire or by a chemical or physical blanket
- Cooling: lowering the temperature of the burning material to below its ignition temperature

Fire can be extinguished by:

<u>Type of fire</u>	<u>Method used</u>
Wood, textiles, paper	Water, fire blanket, foam extinguishers, sand
Fat, oil petrol sand	Foam, fire blanket, CO ² , vaporising liquid, chemical powder,
Live electricity	CO ² , vaporising liquid, chemical powder
Motor vehicles	All types
Clothing	Roll victim in blanket or rug to extinguish flames

Special hazards














CO² is not suitable for use outdoors

vaporising liquid can be toxic in confined spaces (gas and fumes)

chemical powder can damage sensitive equipment

foam and water are very dangerous in electrical fires

burning plastics produce toxic gases (chlorides, cyanide and benzides)

 Fire Protection Association Australia		Portable Fire Extinguisher Guide					Fire Protection Association Australia Website www.fpaa.com.au	
		CLASS A	CLASS B	CLASS C	CLASS E	CLASS F	CLASS D	
Two colour schemes for fire extinguishers exist		EXTINGUISHANT	Wood Paper Plastics	Flammable & Combustible Liquids	Flammable Gases	Electrically Energised Equipment	Cooking Oils and Fats	For fire involving combustible metals use special purpose extinguisher
PRE 1999	FROM 1999		YES	NO	NO	NO	NO	Dangerous if used on flammable liquid, energised electrical equipment and cooking oils/fat fires
		WATER	YES	NO	NO	NO	NO	Dangerous if used on energised electrical equipment
		WET CHEMICAL	YES	NO	NO	NO	YES	Dangerous if used on energised electrical equipment
		FOAM	YES	YES	NO	NO	LIMITED	Dangerous if used on energised electrical equipment
		DRY CHEMICAL	YES <small>(ABE)</small> NO <small>(BE)</small>	YES <small>(ABE)</small> YES <small>(BE)</small>	YES <small>(ABE)</small> YES <small>(BE)</small>	YES <small>(ABE)</small> YES <small>(BE)</small>	NO <small>(ABE)</small> LIMITED <small>(BE)</small>	Look carefully at the extinguisher to determine if it is an BE or ABE unit as the capability is different
		CARBON DIOXIDE	LIMITED	LIMITED	LIMITED	YES	LIMITED	Not suitable for outdoor use
		VAPORISING LIQUID	YES	LIMITED	LIMITED	YES	NO	Check the characteristics of the specific extinguishing agent

LIMITED indicates that the extinguishant is not the agent of choice for the class of fire, but that it may have a limited extinguishing capability.
Solvents such as alcohol or acetone mix with water and therefore require special foam
Green text indicates the class or classes in which agent is most effective

PO Box 1049, Box Hill, VIC, 3129

Tel: (03) 9890-1544

Fax: (03) 9890-1577

E-mail: fpaa@fpaa.com.au

© FPA Australia ACN 005 366 576

The colours for the extinguishers in use since 1999 are:

Water	Red
Wet chemical	Red with orange stripe
Foam	Red with blue stripe
Dry chemical	Red with white stripe
Carbon dioxide	Red with black stripe
Vaporising liquid	Red with yellow stripe

To use a portable extinguisher:

Pull the pin
Aim at the **BASE** of the fire
Squeeze the trigger
Sweep from side to side

ASSIGNMENT/ASSESSMENT RECORD

Student Name:

Student Number:

Assessor:

Address:

Postcode:

Telephone:

Fax:

e-mail:

Topic	Date	CA
Four: General safety		

Assessor's comments:

Assessment Four:

Part A: Reading the labels on common domestic chemicals

Read the labels on the following range of common items found in businesses and homes and fill out the appropriate columns in the tables.

Product	Active ingredients	Label warnings	Special packaging	Storage instructions	Use ratio/ instructions
Washing up liquid					
Sanitising agent (e.g. Milton) <u>or</u> bleach (<i>name</i>)					
Disinfectant					

Product	Active ingredients	Label warnings	Special packaging	Storage instructions	Use ratio/ instructions
Drain cleaner <u>or</u> oven cleaner (name)					
Washing powder/liquid (name)					
Floor cleaner (name)					
Toilet cleaner					

Comments:

Part B: Fire and emergency procedures:

What are the three factors which must be present for a fire to start?

How can you put out a burning frypan safely?

What should you do if someone's clothing catches alight?

If there is a fire and a lot of smoke, you should:

If you have to evacuate a building, you should:
